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SIST EN 543:2003

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 543

April 2003

ICS 83.180

Supersedes EN 543:1994

English version

Adhesives - Determination of apparent density of powder and granule adhesives

Adhésifs - Détermination de la masse volumique apparente des adhésifs en poudre et en granules

Klebstoffe - Bestimmung der Schüttdichte von Pulver- und Granulat-Klebstoffen

This European Standard was approved by CEN on 20 February 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 543:2003) has been prepared by Technical Committee CEN/TC 193 "Adhesives", the secretariat of which is held by AENOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This document supersedes EN 543:1994.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 543:2003 (E)

1 Scope

This European Standard defines a method for the determination of apparent density of powder and granule adhesives.

The method is applicable to all powder and granule adhesives.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 923:1998, *Adhesives— Terms and definitions*

EN 1066, *Adhesives— Sampling*.

EN 1067, *Adhesives— Examination and preparation of samples for testing*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 923:1998 apply.

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4 Principle

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The method is based on the determination of the mass of a known volume of powder or granule adhesive and is performed at a temperature of (23 ± 2) °C and (50 ± 5) % relative humidity.

5 Safety

Persons using this standard shall be familiar with normal laboratory practice.

This standard does not purport to address all safety problems, if any, associated with its use.

It is the responsibility of the user to establish safety and health practices and to ensure compliance with any European or national regulatory conditions.

6 Apparatus

6.1 General

Usual laboratory apparatus including the following:

6.2 Balance, accurate to 0,1 g.

6.3 Cylindrical container, of $(100 \pm 0,5)$ cm³ capacity, and of (40 ± 2) mm internal diameter.

6.4 Funnel, as shown in Figure 1.

6.5 Spatula

Dimensions in millimetres

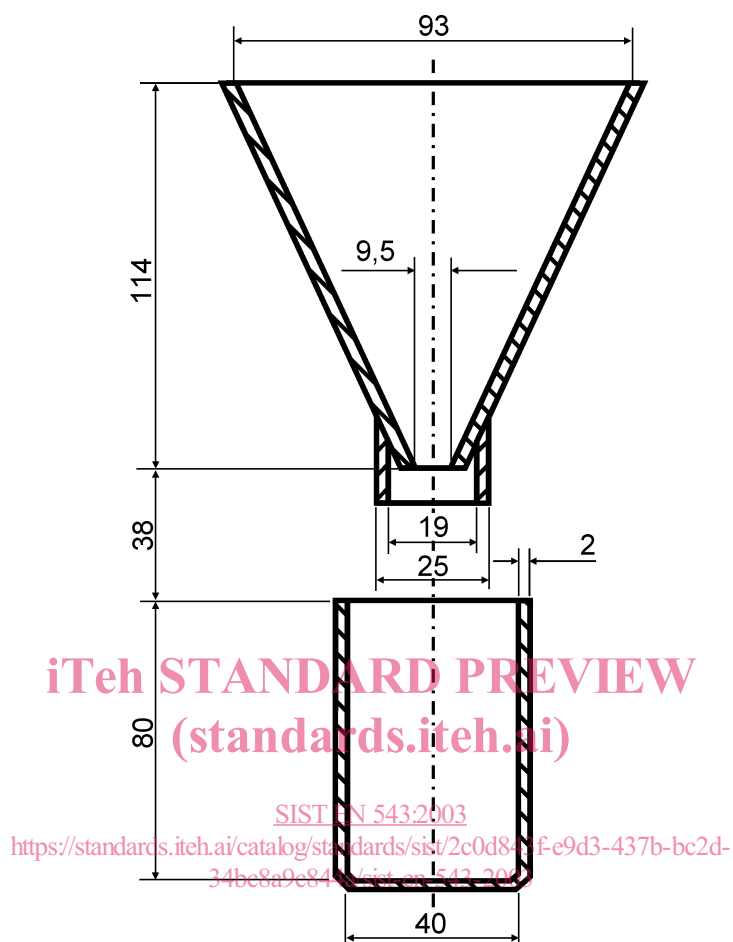


Figure 1 — Funnel and collection cylinder

7 Sampling

Take a representative sample of the adhesive to be tested in accordance with EN 1066 and examine and prepare it for testing as described in EN 1067

8 Procedure

8.1 Determine the mass (m_1) of the empty container (6.3).

8.2 Condition the sample for at least 12 h at (23 ± 2) °C and (50 ± 5) % relative humidity.

8.3 Pour (115 ± 5) cm³ of sample into the funnel (6.4) positioned coaxially over the cylindrical container at $(114 + 38)$ mm height from the top (see Figure 1), taking care that the lower orifice is closed by a suitable closure.

NOTE Any rigid sheet larger than the orifice is suitable.

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8.4 Open the orifice and allow the material to flow into the cylindrical container. If the flow stops or becomes inconveniently slow, it can be speeded up by gently prodding the material in the funnel with a wire.

Avoid compressing the material or shaking the container.

8.5 When the container is full, remove excess product by levelling off at the upper edge with a flat spatula.

Avoid compressing the material or shaking the container.

8.6 Determine the mass (m_2) of the full collection container.

9 Expression of results

The apparent density (in gram per cubic centimetre) is given by the following equation:

$$\rho_a = \frac{m_2 - m_1}{100}$$

where

ρ_a is the apparent density in gram per cubic centimetre of the adhesive;

m_2 is the mass (in gram) of the full container;

m_1 is the mass (in gram) of the empty container.

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The reproducibility and the repeatability of the measure is still unknown.

10 Test report

The test report shall include the following information:

- a) reference to this European Standard;
- b) type and designation of the adhesive tested;
- c) test conditions;
- d) results, number of determinations performed;
- e) any peculiarity observed during the test and any deviation from the test procedure;
- f) date of the test